



Amendment to the Specification

[0011] [A] In FIG 1, a vacuum conduit 12 with a first end is placed in proximity to the earthen dirt 11 to be dug, the second end of said vacuum conduit 12 is attached to a vacuum producing means. Vacuum able dirt 11 is vacuumed into the first end of the vacuum conduit 12 and then vacuumed through the conduit 12 to the second end further having means to store or discharge the vacuumed contents.

[0013] The impact liquid 2 may be directed to impact as a continuous flow of water 2 under pressure or as a pulsed liquid 2 under pressure. The pulsed impact uses ~~leass~~ less liquid to accomplish greater loosening of the ground 11.

[0014] The first and second embodiment of the invention compresses air 1 over water 2 within a container 3. The air 1 enters container 3 through conduit 4 and valve 5. The liquid 2 enters container 3 through conduit 6 and valve 7 with container 3 discharge valve 8 closed. Monitor/controller Monitor and/or Controller 31 sequences the opening and closing of valve 8, valve 7 and valve 5. Conduit 9 is used to direct the water 2 to the impact 10 point of the ground 11.

[0027] In a third embodiment, a gas 1 over liquid 2 impulse means may be created in container 3 by disposing within container 3 a positive electrode 20 and a negative electrode 21 in proximity to each other, filling container 3 with water and passing an electrical charge from positive electrode 20 to negative electrode 21 thus producing an energy discharge in the form of an electrical spark 22. The electrical spark 22 transfers energy into the water 2 which surrounds the two electrodes thus boiling (adding sufficient energy to a quantity of water to change phase from liquid to gas) a percentage of the liquid. The expansion of the evaporated liquid creates compressed gas over the liquid. Monitor/controller Monitor and/or Controller 31 senses the increase in air and water pressure and sequences the opening and closing of valves as needed, opens valve 8 and allows the compressed gas to force the remainder of liquid 2 to be directed through conduit 9 thus impacting 10 the dirt 11 causing it to be loosened and made vacuum.

5 Monitor and/or Controller 31 may consist of a vent 25, a liquid inlet 26, a liquid outlet
31, a spring or pressure resistance means 27, a differential pressure adjustment means 28,
a piston 29, and a closure rod or valve means 30.

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